AMENDMENTS TO THE CLAIMS

1. **(Currently Amended)** A method for screening genomic DNA fragments capable of providing plants with an agriculturally advantageous phenotypic variation, comprising the steps of:

1) preparing genomic DNA from a donor plant that has not been pre-selected for a particular phenotype, which is then cloned into a cloning vector to form a genomic DNA library, with the proviso that the step does not include a preliminary selection step of the genomic DNA fragments;

2) introducing the genomic fragment from each of the genomic clones constituting the genomic DNA library separately and randomly into a recipient plant that has not been pre-selected for a particular phenotype to produce transgenic plants;

3) cultivating the transgenic ~~plants~~ plant or progeny thereof to select a plant exhibiting an agriculturally advantageous phenotypic variation;

4) selecting the genomic DNA fragment, which was introduced in step (2) into the plant selected in step (3), as a purposed genomic DNA fragment; and

5) ~~optionally~~ isolating and reintroducing the genomic DNA fragment selected in step (4) or a part thereof into another plant of any species to produce a plant~~to repeat steps (3) and (4), and selecting a genomic DNA fragment which produces a plant exhibiting an agriculturally advantageous phenotypic variation as a purposed genomic DNA fragment in each repetition~~; and

6) cultivating the plant of step 5) to select a plant exhibiting said agriculturally advantageous phenotypic variation.

2. – 12. **(Canceled)**

13. **(Withdrawn)** A method for producing a genomic DNA fragment capable of bringing about an agriculturally advantageous phenotypic variation in plants comprising the steps of: culturing E. coli cells containing a cloning vector carrying a genomic DNA fragment selected by the method according to claim 1; and preparing the cloning vector amplified in the E. coli cells along with the genomic DNA fragment.

14. **(Withdrawn)** A method for producing a genomic DNA fragment wherein the genomic DNA fragment selected by the method according to claim 1 is used as a template and the amplification of the fragment is conducted by a biochemical amplification method.

15. **(Withdrawn)** A method for producing a DNA fragment wherein the genomic DNA fragment obtained by the method of claims 13 or 14 is digested with restriction enzyme(s).

16. **(Canceled)**

17. **(Withdrawn and Currently Amended)** A method for producing a plant having an agriculturally advantageous phenotypic variation comprising the step of introducing a genomic DNA fragment capable of bringing about an agriculturally advantageous phenotypic variation in plants, wherein the genomic DNA fragment is screened by the method according to claim 1 and the method further ~~produced by a method comprising~~comprises the steps of: culturing E. coli cells containing a cloning vector carrying the genomic DNA fragment, and preparing the cloning vector amplified in the E. coli cells along with the genomic DNA fragment.

18. (**Withdrawn**) A method for producing a plant having an agriculturally advantageous phenotypic variation according to claim 17 wherein the step of introducing a genomic DNA fragment capable of bringing about an agriculturally advantageous phenotypic variation in plants comprises the steps of: introducing the genomic fragment into a plant cell or tissue; regenerating a complete plant from the plant cell; and cultivating the regenerated plant.

19. (**Withdrawn**) A method for producing a plant according to claim 18 wherein the introduction of the genomic DNA fragment into a plant cell or tissue is conducted by a method selected from the group consisting of biological introduction methods, physical introduction methods and chemical introduction methods.

20. (**Withdrawn**) A method for producing a plant according to any one of claims 17 to 19, wherein the genomic DNA fragment capable of bringing about an agriculturally advantageous phenotypic variation is introduced in a plant of the same species as that of the plant from which the genomic DNA fragment was derived.

21. (**Withdrawn**) A method for producing a plant according to any one of claims 17 to 19, wherein genomic DNA fragment capable of introducing an agriculturally beneficial phenotypic variation is introduced in a plant of a different species from the plant from which the genomic DNA fragment was derived.

22. **(Canceled)**

23. (**Withdrawn**) A method for analyzing a genomic DNA fragment capable of bringing

about an agriculturally advantageous phenotypic variation comprising the steps of: culturing E. coli cells containing a cloning vector carrying a genomic DNA fragment selected by the method according to claim 1; and preparing the cloning vectors amplified in the E. coli cells along with the genomic DNA fragment, and reading the nucleotide sequence of the plant genomic DNA fragment in the cloning vector.

24. **(Withdrawn)** A method for analyzing a DNA fragment comprising the step of restricting the genomic DNA fragment selected according to claim 1.

25. **(Withdrawn)** A method for analyzing a DNA fragment wherein the genomic DNA fragment selected by the method according to claim 1 is used as a template and the amplification is conducted by a biochemical amplification method.

26. **(Withdrawn)** A method according to claim 24 or 25 wherein the analysis comprises the step of reading the nucleotide sequence of the restriction product of the genomic DNA fragment or the biochemically amplified product.

27. – 31. **(Canceled)**

32. **(Currently Amended)** The method according to claim ~~1 or 31~~, wherein the size of the selected genomic DNA fragment is 1 kb or greater provided that the DNA fragment can be introduced into the cloning vector.

33. **(Currently Amended)** The method for screening according to ~~claim 1 or 31~~claim 1,

wherein step (2) comprises the sub-steps of: introducing the genomic fragment into the genome of a cell or tissue of the plant; regenerating a complete plant from the plant cell; and cultivating the regenerated plant.

34. **(Previously Presented)** The screening method according to claim 33, wherein the introduction of the genomic DNA fragment into a plant cell or tissue is conducted by a method selected from the group consisting of biological introduction methods, physical introduction methods and chemical introduction methods.

35. **(Currently Amended)** The screening method according to ~~claim 1 or 31~~claim 1, wherein the agriculturally advantageous phenotypic ~~mutation~~ variation in a plant gives rise to an increase or decrease of the size or the weight of at least a part of the plant or of at least a constituent thereof, an increase of growth rate or an excellent resistance against diseases or pests, under normal cultivation conditions, as compared with a case where the plant does not have the phenotypic variation.

36. **(Currently Amended)** The screening method according to ~~claim 1 or 31~~claim 1, wherein the agriculturally advantageous phenotypic variation in a plant gives rise to an increase or decrease of the size or the weight of at least a part of the plant or of at least a constituent thereof, an increase of growth rate or an excellent resistance against diseases or pests, under conditions which are more stressful for the plant than normal conditions, as compared with a case where the plant does not have the phenotypic variation.

37. **(Previously Presented)** The screening method according to claim 35, wherein the plant

transformed in step (2) is of the same species as that of the plant which supplied the genomic DNA in step (1).

38. **(Previously Presented)** The screening method according to claim 36, wherein the plant transformed in step (2) is of the same species from that of the plant which supplied the genomic DNA in step (1).

39. **(Previously Presented)** The screening method according to claim 35, wherein the plant transformed in step (2) is of a different species from that of the plant which supplied the genomic DNA in step (1).

40. **(Previously Presented)** The screening method according to claim 36, wherein the plant transformed in step (2) is of a different species from that of the plant which supplied the genomic DNA in step (1).

41. **(Currently Amended)** The screening method according to claim 37, wherein the ~~optional~~ reintroduction of the genomic DNA fragment in step (5) is made into a plant of the same species as that of the plant which was transformed in step (2).

42. **(Currently Amended)** The screening method according to claim 38, wherein the ~~optional~~ reintroduction of the genomic DNA fragment in step (5) is made into a plant of the same species as that of the plant which was transformed in step (2).

43. **(Currently Amended)** The screening method according to clam 39, wherein the ~~optional~~

reintroduction of the genomic DNA fragment in step (5) is made into a plant of the same species as that of the plant which was transformed in step (2).

44. (**Currently Amended**) The screening method according to claim 40, wherein the ~~optional~~ reintroduction of the genomic DNA fragment in step (5) is made into a plant of the same species as that of the plant which was transformed in step (2).

45. (**Currently Amended**) The screening method according to claim 37, wherein the ~~optional~~ reintroduction of the genomic DNA fragment on step (5) is made into a plant of a different species from that of the plant which was transformed in step (2).

46. (**Currently Amended**) The screening method according to claim 38, wherein the ~~optional~~ reintroduction of the genomic DNA fragment in step (5) is made into a plant of a different species from that of the plant which was transformed in step (2).

47. (**Currently Amended**) The screening method according to claim 39, wherein the ~~optional~~ reintroduction of the genomic DNA fragment in step (5) is made into a plant of a different species from that of the plant which was transformed in step (2).

48. (**Currently Amended**) The screening method according to claim 40, wherein the ~~optional~~ reintroduction of the genomic DNA fragment in step (5) is made into a plant of a different species from that of the plant which was transformed in step (2).

49. (**NEW**) A method for screening genomic DNA fragments capable of providing a plant

with an agriculturally advantageous phenotypic variation, comprising the steps of:

1) preparing genomic DNA from a donor plant that has not been pre-selected for a particular phenotype, which is then cloned into a cloning vector to form a genomic DNA library, with the proviso that the step does not include a preliminary selection step of the genomic DNA fragments;

2) introducing the genomic fragment from each of the genomic clones constituting the genomic DNA library separately and randomly into a recipient plant that has not been pre-selected for a particular phenotype, which is the same species as the donor plant, to produce a transgenic plant;

3) cultivating the transgenic plants or progeny thereof to select a plant exhibiting an agriculturally advantageous phenotypic variation;

4) selecting the genomic DNA fragment, which was introduced in step (2) into the plant selected in step (3), as a purposed genomic DNA fragment; and

5) optionally introducing the genomic DNA fragment selected in step (4), or a part thereof, into another plant to repeat steps (3) and (4), and selecting a genomic DNA fragment which produces a plant exhibiting an agriculturally advantageous phenotypic variation as a purposed genomic DNA fragment in each repetition.